



09/641,734

5-26-05

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Dated: May 24, 2005

Signature:

(Judy Daley)

Docket No.: 55156(70904)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Hiroyuki Katayama

Patent No.: 6,882,617

Issued: April 19, 2005

For: MAGNETIC RECORDING MEDIUM AND
METHOD OF RECORDING

Certificate
MAY 31 2005
of Correction

REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 CFR 1.322

MS Post Issue
Commissioner for Patents
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Dear Sir:

Upon reviewing the above-identified patent, the Patentee has noted a typographical error that should be corrected.

At page 1: PCT Filed: Please change the date from "Apr. 4, 1999" to – Apr. 2, 1999 --, as indicated in red on the original Filing Receipt dated 10/26/2000 (copy enclosed).

The error was not in the application as filed by the Patentee (see enclosed copy of Declaration and Power of Attorney and copy of cover page of published International (PCT) application as originally filed with filing date circled in red). Accordingly, the Patentee respectfully submits that no fee is required.

Transmitted herewith is a proposed Certificate of Correction that if entered will effect the correct amendment of the above-identified United States Patent. Patentee respectfully solicits the granting of this request for the issuance of a Certificate of Correction.

Finally, the Patentee as noted above believes that additional fees are not required in connection with the consideration of the foregoing Request for a Certificate of Correction of the above-identified United States Patent. However, if for any reason a fee is required, a fee paid is inadequate or a credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. 04-1105, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Dated: May 24, 2005

Respectfully submitted,

By David A. Tucker
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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,882,617
DATED : April 19, 2005
INVENTOR(S) : Hiroyuki Katayama

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At page 1: PCT Filed: Please change the date to April 2, 1999.

MAILING ADDRESS OF SENDER:
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PATENT NO. 6,882,617

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Application No. (if known): 09/647,734

Attorney Docket No.: 55156(70904)

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Registration Number, if applicable

(617) 439-4444

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Certificate of Correction (1 page)
Request for Certificate of Correction (No Fee) (2 pages)
Copy of Filing Receipt (3 pages, PCT data circled in red)
Copy of Declaration as filed (4 pages, PCT filing date circled in red)
Copy of cover page of International Publication of corresponding
PCT application (1 page, filing date circled in red)
Copy of Page 1 of U.S. Patent No. 6,882,617 B1 with marked
correction (1 page)



US006882617B1

(12) United States Patent
Katayama(10) Patent No.: US 6,882,617 B1
(45) Date of Patent: Apr. 19, 2005(54) MAGNETIC RECORDING MEDIUM AND
METHOD OF RECORDING

(75) Inventor: Hiroyuki Katayama, Nara (JP)

(73) Assignee: Sharp Kabushiki Kaisha, Osaka (JP)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/647,734

(22) PCT Filed: Apr. 4, 1999 Apr. 2, 1999

(86) PCT No.: PCT/JP99/01783

§ 371 (c)(1),
(2), (4) Date: Oct. 4, 2000

(87) PCT Pub. No.: WO99/52101

PCT Pub. Date: Oct. 14, 1999

(30) Foreign Application Priority Data

Apr. 6, 1998 (JP) 10-92127

(51) Int. Cl.⁷ G11B 7/26(52) U.S. Cl. 369/288; 369/275.1; 369/13.07;
428/694 ML(58) Field of Search 369/275.1, 275.2,
369/275.3, 275.4, 13.07, 288, 283, 13.42,
13.41, 13.4, 286; 360/126, 125, 106; 505/171;
428/64.3, 694 ML, 694 SC, 694 XS, 694 RE

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Primary Examiner—Ali Neyzari

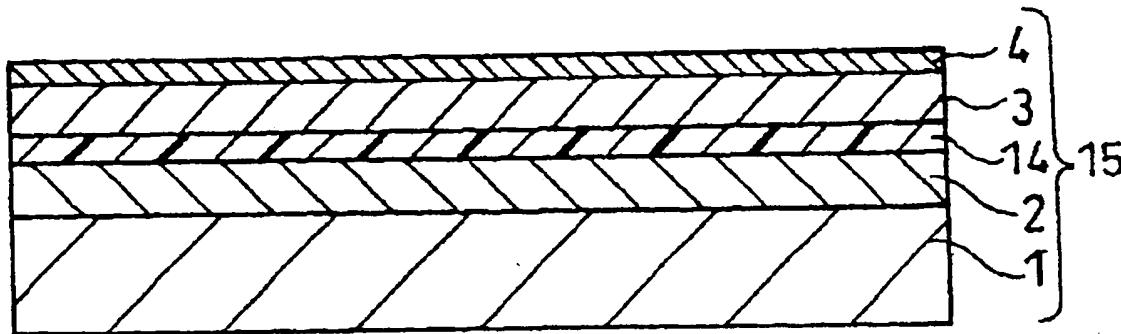
(74) Attorney, Agent, or Firm—David G. Conlin; David A. Tucker; Edwards & Angell, LLP

(57) ABSTRACT

In a method of recording and reproduction using a magnetic storage medium, a magnetic storage medium (5) is used in which at least magnetic recording film (2) and a superconducting film (3) are deposited. According to the method,

the superconducting layer (3) is partly heated where data is either recorded in recording or reproduced in reproduction, using a semiconductor laser (6) to or beyond its critical temperature at which diamagnetism disappears. Thus, in recording, data can be recorded with high density without affecting adjacent parts of the magnetic recording layer regardless of the physical size of the magnetic head. In reproduction, data can be reproduced from a minuscule part at high S/N ratios with crosstalk from adjacent bits being substantially eliminated.

9 Claims, 4 Drawing Sheets





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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/647,734	10/04/2000	2652	860	55156-(904)	4	10	2

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Applicant(s)

Hiroyuki Katayama, Nara-shi, JAPAN;

Continuing Data as Claimed by Applicant

THIS APPLICATION IS A 371 OF PCT/JP99/01783 04/02/1999

Foreign Applications

If Required, Foreign Filing License Granted 10/26/2000

Title

Magnetic recording medium and method of recording

Preliminary Class

360

Data entry by : ORDENEZ, MARTA

Team : OIPE

Date: 10/26/2000



JUN 2 2005



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Attorney's Docket No. _____

Page 1 of 4

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed at 201) below or an original, first and joint inventor (if plural names are listed at 201-208 below) of the subject matter which is claimed and for which a parent is sought on the invention entitled:

MAGNETIC STORAGE MEDIUM AND METHOD OF RECORDING AND REPRODUCTION
USING THE SAME

which is described and claimed in:

the specification attached hereto.

the specification in U.S. Application Serial Number _____, filed on _____

the specification in PCT international application Number PCT/JP99/01783, filed on Apr. 2, 1999; and was amended on Aug. 3, 1999 and Nov. 1, 1999.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.



- 2 -

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Prior U.S. Applications or PCT International Applications Designating the U.S.-Benefit Under 35 U.S.C. §120				
U.S. Applications		Status (Check One)		
Application Serial No.	U.S. Filing Date	Patented	Pending	Abandoned
PCT Applications Designating the U.S.				
Application No.	Filing Date	U.S. Serial No. Assigned		

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Applicant	Provisional Application Number	Filing Date

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) with full powers of association, substitution and revocation to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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SEND CORRESPONDENCE TO:

Dike, Bronstein, Roberts & Cushman LLP
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Boston, Massachusetts 02109

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2 0 1	Katayama Nara-shi 1-17-34-510, Tomio-Kita	Hireyuki Nara Japan Nara-shi		Japan Nara 631-0076 Japan

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Signature of Inventor 201 	Signature of Inventor 202
Date: August 28, 2000	Date:

PCT

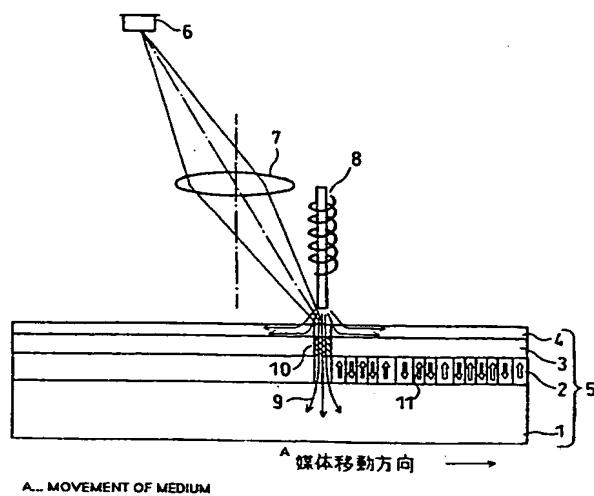
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(51) 国際特許分類6 G11B 5/66, 5/02, H01F 10/26, 10/16, 10/12	A1	(11) 国際公開番号 WO99/52101 (43) 国際公開日 1999年10月14日(14.10.99)
(21) 国際出願番号 PCT/JP99/01783		
(22) 国際出願日 1999年4月2日(02.04.99)		
(30) 優先権データ 特願平10/92127 1998年4月6日(06.04.98)	JP	(81) 指定国 KR, SG, US, 欧州特許 (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE) 添付公開書類 国際調査報告書 補正書
(71) 出願人 (米国を除くすべての指定国について) シャープ株式会社(SHARP KABUSHIKI KAISHA)[JP/JP] 〒545-8522 大阪府大阪市阿倍野区長池町22-22 Osaka, (JP) (72) 発明者 ; および (75) 発明者／出願人 (米国についてのみ) ・片山博之(KATAYAMA, Hiroyuki)[JP/JP] 〒631-0076 奈良県奈良市富雄北1-17-34-510 Nara, (JP) (74) 代理人 弁理士 原 謙三(HARA, Kenzo) 〒530-0041 大阪府大阪市北区天神橋2丁目北2番6号 大和南森町ビル 原謙三国際特許事務所 Osaka, (JP)		

(54) Title: MAGNETIC RECORDING MEDIUM AND METHOD OF RECORDING

(54) 発明の名称 磁気記録媒体およびその記録再生方法



(57) Abstract

A recording and reproducing method of the magnetic recording medium uses a magnetic recording medium (5) that includes a laminate of a magnetic recording film (2) and a superconducting film (3). A semiconductor laser (6) is used to increase the temperature of the superconducting film (3) at recording parts during recording and at reproducing parts during reproduction above the critical temperature at which diamagnetism disappears. This achieves high-density recording independently of the size of the magnetic head and without affecting adjacent areas in the magnetic recording layer. Moreover, information is reproduced from even minute areas with improved S/N by substantially restricting a crosstalk from adjacent bits.